Gov Intervention in Market Failure

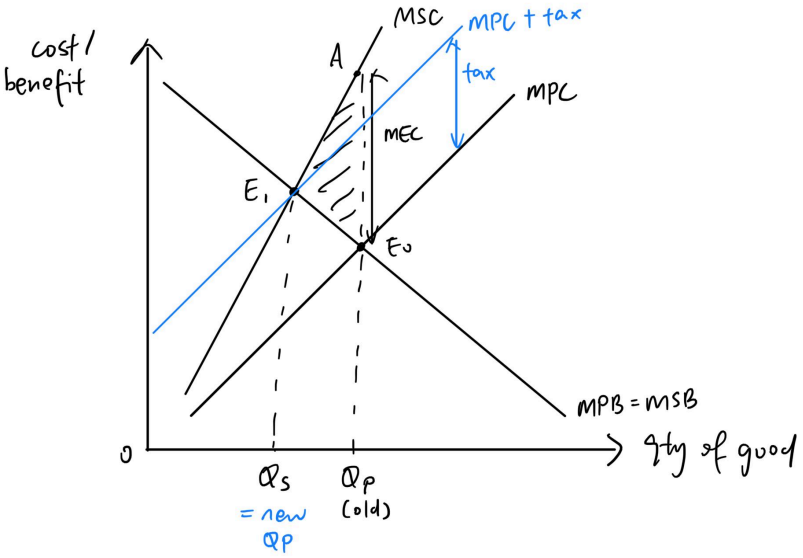
Aims of gov intervention:

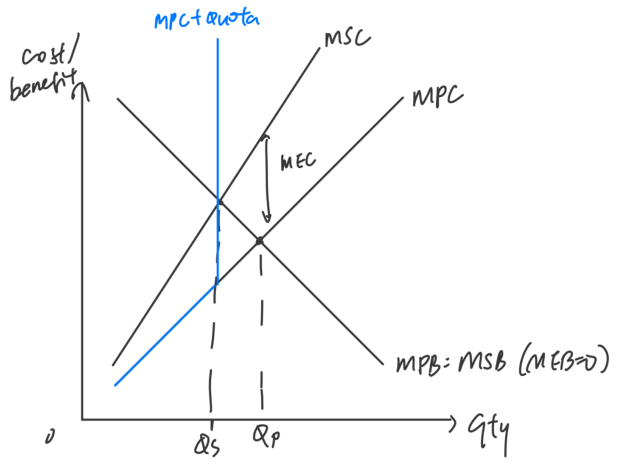
1. Correct allocative inefficiency
2. Correct inequity (link to equity if part (a) asks why government intervention is needed in the market for (essential good).

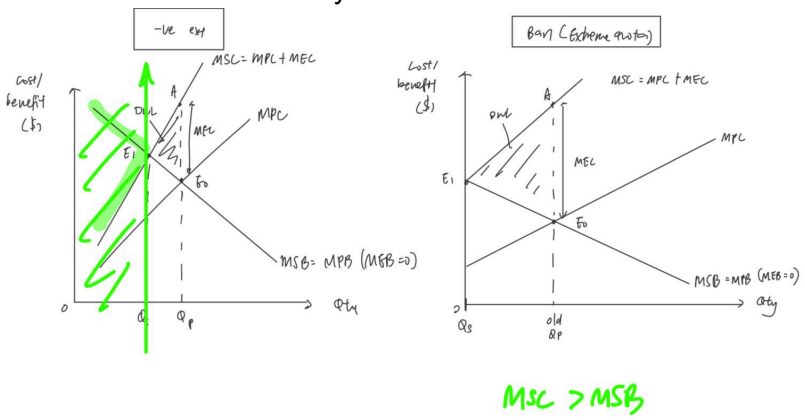
** **Purpose** of policy (eg internalize externality) + **How** policy achieves allocative efficiency (which curves are shifted) **

Direct VS Indirect tax/subsidy: Direct (on consumers) shifts MPB (dd) ; Indirect (on producers) shifts MPC (ss)

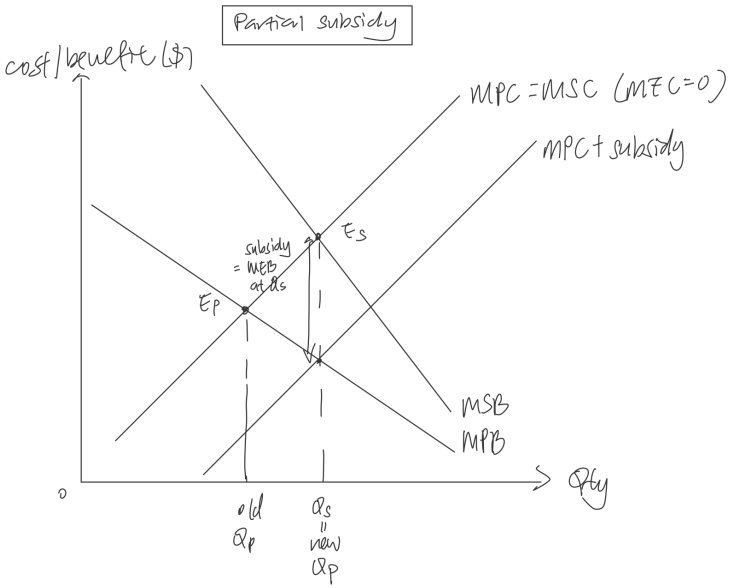
MF Source	Policy	Examples	Thesis / Antithesis
Public Goods (missing representative market demand)	**Direct provision (does NOT = FREE provision)** • Government **directly provides** for public goods because the private producers will not provide them by paying for its production. • Addresses allocative inefficiency & lead to more equitable outcomes	Provide free TV broadcast for education purposes (eg PBS)	**Not Feasible: Government budget constraints** • Need to increase gov expenditure to finance spending on public goods • incur opportunity costs **Not Feasible: Imperfect Information** Free-rider problem **-> missing representative demand** **-> price signaling function distorted** -> hard to determine actual benefits & costs -> may overprovide / underprovide -> still allocatively inefficient Eg USA over allocate resources to defense Batam under provide street lighting Singapore over provide street lighting Further eval: (rather than saying some provision is better than non-provision) this process is not static Through feedback collected by the government through observations of the market and feedback from citizens, the government can adjust quantity of public good provided, until qty is closer to social optimum qty

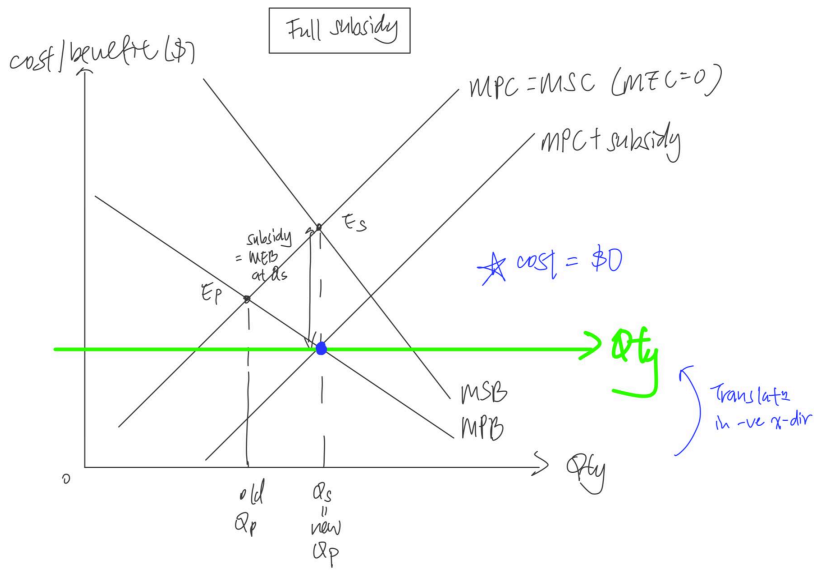
Negative externality	**Specific indirect tax**
	- **tax amount = MEC <u>at Qs</u>**
	
	- Increase COP
	  - Either→ Increase MPC of firm → **Producers internalize MEC (purpose)**
	  - Or → Decrease profitability → Decrease supply → Increase prices to consumer → Increase MPC of consumer → **Consumers internalize MEC (purpose)**
	
	How Tax achieves allocative efficiency:
	- (g) Increase MPC from MPC to MPC + tax (don't need to specify direction of shift)
	 
	
	- New private optimum qty (where MPC+tax=MPB) will coincide with social optimum qty
	- No over-consumption
		ERP: an electronic toll collection scheme to manage traffic by way of <u>road pricing</u>.
		
		SG pollutant tax: Tax on every tonne of CO2 gas produced
			[ERP] Effective: Salience Bias
			● The In-vehicle Unit (IU) beeps whenever car passes thru ERP gantry and $$ is deducted
			● Drivers more aware of tax
			-> internalization of MEC made more effective
			
			[ERP] Appropriate:
			ERP can be adjusted according to different levels of congestion, at different times of the day → targeted directly at road users who use the congested roads
			
			[Pollutant Tax on MEC] Appropriate:
			Incentivise profit max firms to innovate new ways to reduce MEC.
			(reduced MEC = reduced COP = greater profit)
			
			Not Effective: PED
			- Good has few close substitutes & low proportion of income spent
			- Demand is price inelastic
			- Increase in price cause less than proportionate decrease in qty dd
			- Lower Y group hv to pay higher proportion of incomes compared to higher Y grp
			- Increased inequity (distribution of Y)
			
			Not Feasible:
			- Hard to assess exact monetary value of MEC at Qs due to imperfect information (E1)
			- Difficult to accurately assess monetary value of loss of productivity (MEC) due to consumption of good, due to the intangible nature of the MEC (cause of imperfect info)
			- Gov failure arises when there is overtaxation which causes underconsumption. This may result in DWL due to underconsumption because of over-taxation

	- Deadweight loss eliminated - Allocative efficiency achieved - Market failure addressed		> DWL in an unregulated market.
	Quota ● (d) Refers to maximum legal quantity that can be produced/consumed ○ price of licensing mechanism (eg COE) determined by dd/ss (market forces) → allocated to those willing & able to pay ○ ~~(g) MPC increases (for COE)~~ ○ ~~internalize negative externality~~  (How does quota achieve allocative efficiency) ● set consumption/production of good to socially optimal level ● **Eliminates** DWL (purpose) **Ban: Extreme form of quota**	VQS (quota) + COE (licensing mechanism) Must buy COE to buy car: <u>lump-sum</u> payment, <u>increases fixed cost</u> of driving	**(COE) Not Effective: Sunk Cost Fallacy** high sunk cost (COE prices) -> even when MPB < MPC -> consume more of good (drive car excessively) to <u>reduce average cost of sunk cost</u> (COE price) -> <u>Link back to mkt failure:</u> end up worsening mkt failure cuz increase over-consumption **(COE) Not Effective: Equity** If prices of licensing mechanism too high -> good less affordable to less rich -> inequity **Not Effective: Not intrusive enough?** Yes, quota limits number of goods bought, but doesn't control how and when goods are consumed > difficult to ensure consumption is at 0Qs <u>Link back to mkt failure:</u> If car owners use their cars at same time and on same road, congestion may still occur > does not address negative externality **(For Ban) Not Appropriate**: - MEC is not that severe - MSC does not exceed MSB for all qty levels - Gov failure - (g) usual -ve ext graph - DWL with Ban > original DWL - Greater allocative inefficiency

	- (d) A ban is a form of quota where government limits quantity to social optimum (Qs), which is 0 (How does Ban achieve allocative efficiency) - **(g) Assume for all quantity levels, MSC > MSB** - Private optimum = social optimum = 0 - No MEC is incurred. - Deadweight loss is eliminated. - Allocative efficiency is achieved.  Msc > MSB (Ban diagram is - ext diagram translated in the negative x-dir) (set Qs = 0)		
	Tradable Permits (accompanying policy to quota) (*not good to choose this policy if given a choice – very lengthy)* ● Quota + licensing + mkt-based system (allow trading) - Gov estimates socially efficient output and accepted level of pollutant emitted, decides on qty of permits to issue - Each permit allows firms to produce a certain level of negative externalities (pollutant) - Number of permits held by firms determines firms'	SG pollutant tradable permits	**Side effects**: - Dominant firms may buy up permits - Acts as barrier to entry cuz new firms lack permits to produce good

	quota of negative externality they can produce. - These permits are **tradable**. Firms can buy and sell permits using prices determined by market forces. - As there is opportunity cost of polluting (money they could have earned from selling excess permits), thus they **internalize negative externality (purpose)** (How policy addresses allocative inefficiency) - Firms are incentivised to engage in process innovation to reduce pollution emitted, so that they can sell excess permits - Reduces MEC - Qty produced decreases from Qp towards Qs - Reduces allocative inefficiency		
	Moral Suasion / Public Education - **Explain why u assume consumers will be altruistic**		
Positive externality	**Subsidy** ● **Direct/indirect subsidy amt = MEB at Qs, distance …** if subsidy to reduce inequity, <u>means-tested</u> subsidy (Rare) Direct subsidy → Increases MPB (like increase demand) (Usual) Indirect subsidy → Decreases MPC - Decrease producers' COP - Either→ Decrease MPC of firms → **Firms internalize MEB (purpose)** - Or → Increase profitability → Increase supply → Firms pass on lower cost to consumers in the form of lower prices → Decrease MPC of consumers → **Consumers internalize MEB (purpose)**	SG subsidizes pri education & healthcare (MediShield). UK FULL subsidy cuz they believe that healthcare is a *fundamental basic right*, so full subsidy is *most equitable*. SG PARTIAL subsidy done through	**Not feasible:** - Hard to estimate monetary value of MEB at Qs due to imperfect info. (E1) - Difficult to *place an exact monetary value on the productivity gains to an economy (MEB)* from a healthier workforce due to the *difficulty in isolating the causality effect of consuming healthcare on productivity (**Cause** of imperfect info).* - Over Subsidisation → Overconsumption/production. Gov failure whereby DWL from overconsumption due to oversubsidization > DWL from underconsumption w/o gov intervention. (No graph) **Not feasible**: Huge opportunity cost. Subsidy could have been used to finance other gov spending. Unsustainable in long run. Unintended consequence; lower SOL of low income group

	How subsidy achieves allocative efficiency: - MPC shifts from MPC to MPC+subsidy - New private optimum qty where MPB=MPC+subsidy coincides with Qs - Eliminate under-consumption - DWL removed - Allocative efficiency achieved  Subsidy can be used to target both positive externality and imperfect information about benefits → can combine diagram. 3 benefit curves. Bottom to top: MPB perceived, MPB actual, MSB.	*means-testing*, gives more financial help to those who cannot afford healthcare. More equitable.	→ Eval for FULL subsidy: Moral Hazard - Consumers take less care of health by engaging in riskier actions eg excessive drinking, cuz healthcare costs are not borne by them.

			
	Direct Provision Gov directly provides to increase production to social optimum.		**Not effective:** Gov is not profit driven Methods of production may not be cost efficient
	Joint Provision Both gov and private firms sell goods Increases market supply Decreases price, increases quantity Corrects underconsumption/production	Public and private hospitals	^^
	Moral Suasion		
Info failure → **also can use subsidy**	**Moral Suasion / Public Education** - (How) Gov use education campaigns to educate people about actual benefits/costs. (purpose) - **(Demand determinant) Change taste & preference against consumption of good** - shift MPB perceived to MPB actual		**Appropriate:** Targets root cause of imperfect information. **Time:** Take long time to change mindset

[Consumer ignorance & Asymmetric info] "**Mixed financing system**": Think of co-pay & moral hazard	(how public education achieves allocative efficiency) - Demand decrease - (g) MPX increase from MPX perceived *towards* MPX actual - Qty consumed decrease from Qp *towards* social optimum Qa - Decrease over consumption		
	Regulation - Make consumption compulsory - Ensure consumption is at Qa (purpose) - Eliminates allocative inefficiency - Eliminates DWL	SG pri education and some vaccinations are compulsory.	
Market Dominance	**Anti-trust policies** **Lump Sum tax** **Nationalization** **MC & AC pricing**		
Factor Immobility			

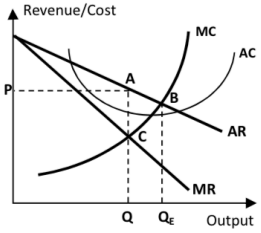
Conclusion = Summary + Evaluative conclusion
Evaluative Conclusion (Explain judgment):

- FEAST: Should policy be accompanied with other strategies?
  - Short run, long run. Strain on the government budget. Sustainability.
- Country Context: How does country characteristic enhance/limit effectiveness of policy?
  - SG **law enforcement** very strict → Enhance effectiveness of **quota / tax**
  - SG **small** country → **Means testing** for partial subsidy done in cost efficient manner → **Partial subsidy** appropriate
  - **Aging** population → Long run healthcare **subsidy** unsustainable
  - Developed country → High usage of media → **Public education** effective

- **Budget position** → SG has been practicing fiscal prudence → able to do **free provision** without drawing on national reserves

Multiple MF sources + Multiple policies evaluative conclusion:

1) Evaluate policy given in qn: Is it the best?
    a) FEAST
    b) Country context
2) Evaluate if need other policies:
    a) Need other policies to accompany to target other MF sources that the policy doesn't address?

Issue	Cause	Policy	Evaluation
Imperfect Competition *(Partial market failure)*	Inefficiency arises in imperfect markets, esp. monopolies: **1. Allocative Inefficiency** since P > MC, resulting in a deadweight loss of ABC since society values additional units of the good at ABQ_EQ, more than the cost to produce them, CBQ_EQ.  *However, this may be tolerated if the monopoly:* • *Is a natural monopoly, where the market size allows for only one firm to operate at the MES; or* • *Is able to reap substantial economies of scale or achieve dynamic efficiency, and hence perform better than a perfectly competitive firm.* **2. X-Inefficiency** as firm has no incentive to lower costs due to lack of competitive pressures.	1. Prohibiting formation of monopolies (e.g. antitrust laws) 2. Prohibiting monopolistic behaviour such as predatory pricing (Singapore Competitive Commission does this) 3. Lowering barriers to entry to create a **contestable market** (e.g. through deregulation) 4. Setting price at **P=MC**, so allocative efficiency is achieved and supernormal profits are lowered 5. Setting price at **P=AC**, so only normal profits are earned 6. Imposing a **lump-sum tax** • Adds to firm's fixed costs, so AC rises • Price and output unchanged • Firm loses profits to government as tax revenue 7. Imposing a **specific tax** • Adds to firm's variable cost o Both MC and AC rise • Price increases, output decreases • Tax burden borne by both firm and consumers	3. Significant barriers to entry may still exist, such as established firms' reputation. 4. Natural monopolies will make economic losses at P=MC, hence it needs to be coupled with a **two-part tariff** on consumers to make up for their losses: • Fixed minimum charge to cover firm's fixed costs • Further charge that varies with quantity • BUT fixed cost may deter potential users from using the service. 5-7. Allocative efficiency still not achieved • BUT equity achieved, as firm's profits are reduced.

*On the whole, the **role of the government** is to achieve all <u>six</u> economic goals, namely:*

- Micro: Efficiency and Equity, by correcting market failure (as above)
- Macro: Growth, Full employment, Low inflation and a Healthy BOP (discussed in next chapter)

Hence, when "government" is mentioned in micro questions, you should immediately think of the types of market failures above.

However, **government failure** *(applicable to all solution above!)* may actually worsen allocative efficiency instead, due to:

- Politicians motivated by **self interests** instead of society's interests
- **Electoral pressures** overshadow societal welfare, e.g. unpopular taxes are avoided
- **Imperfect information:** Government may not know the full costs/benefits of policies, the exact monetary value of externalities, or level of demand for a public good
- **Costs of administration and enforcement** might outweigh the social benefits from policies
- **Time lags** due to bureaucracy and inefficiency may cause policies to be ineffective or too late
- **Overdependence** on government intervention, resulting in a vicious cycle of intervention